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**DETAIL JAPANESE**

1. JP,2002-138937,A

## PATENT ABSTRACTS OF JAPAN

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**334380**

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**HIROSHI**

(22)Date of filing :

**01.11.2000**

(72)Inventor : **ICHIKAWA**

**HIROSHI**

### (54) ARC ROTATING DEVICE

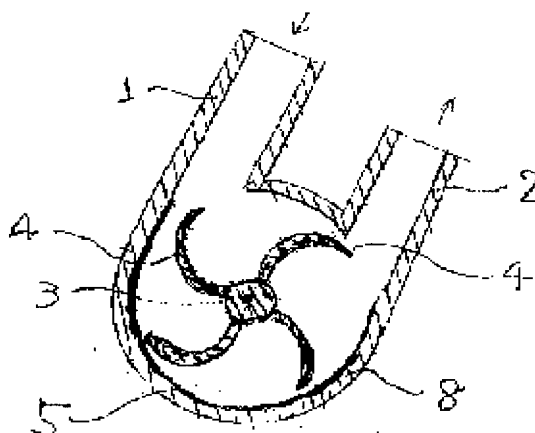
(57)Abstract:

PROBLEM TO BE

SOLVED: To provide a structure mainly using inertia force of a hydroturbine.

SOLUTION: In this arc rotating device, the inertia force generated on an arc peripheral surface 5 of a cylindrical casing 8 is used and absorbed by a

vane 4 to take out rotating force. This arc rotating device is in a simple structure and effective, and can be applied to various use.



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[Field of the Invention] This invention relates to a hydro turbine.

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[Effect of the Invention] Since this invention is constituted as explained above, it does so effectiveness which is indicated below.

[0011] Since a fluid flows from \*\*\*\*\* 1 to the cylindrical casing 8 and an exhaust pipe 2, it flows a \*\*\*\* same flat-surface top. For this reason, the thrust of shaft orientations is not generated.

[0012] Since \*\*\*\*\* 1 and an exhaust pipe 2 are connected [ casing / 8 / cylindrical ] at the U character mold, they are simple for processing of a fluid and its manufacture costs of an arc rotating machine are also cheap.

[0013] As mentioned above, with easy structure, an arc rotating machine has few mechanical losses, and has the effectiveness of being able to miniaturize

[Problem(s) to be Solved by the Invention] The following troubles were conventionally seen by this kind of equipment.

(1) Lead the conventional hydraulic turbine to a guide vane from the inner circumference section of a volute casing, its structure is complicated, and its manufacture costs are expensive.

(2) In order to generate a vortex, structure becomes three-dimensional and equipment is complicated.

[Means for Solving the Problem] As a means for attaining the above-mentioned purpose, since this invention is flow sucked out of \*\*\*\*\* 1 by the exhaust pipe 2 through the cylindrical casing 8 as shown in drawing 1 , it is easy structure and becomes superficial [ flow ] cheaply [ the costs of manufacture ]. It is effective in that structure is easy, cheap, and being small.

[0005]

[Embodiment of the Invention] When the gestalt of implementation of invention is explained with reference to a drawing based on an example, drawing 2 is the perspective view in which the A-A view sectional view assembled the sectional view of an arc rotating machine, and drawing 1 , and the revolving shaft 3, the disk 6, and the wing 4 assembled drawing 3 .

[0006] In drawing 1 , \*\*\*\*\* 1 for leading a fluid to the cylindrical casing 8 is connected, and an exhaust pipe 2 is connected [ mold / U character ] near \*\*\*\*\* 1, and discharges outside through an exhaust pipe 2.

[0007] In drawing 2 , the side face of the cylindrical casing 8 is monotonous, is sealed, and inserts in and supports a revolving shaft 3 through bearing 7 on the center line in the circle of a side face.

[0008] In drawing 3 , to the two vertical revolving shaft 3, a disk 6 is opened as much as possible, and is fixed in parallel in the cylindrical casing 8, and a wing 4 is implanted in the vertical disk 6 and a revolving shaft 3.

[0009] The periphery side 5, i.e., the arc peripheral surface of drawing 1 , and the force of pushing near it generate the fluid which flowed from \*\*\*\*\* 1 in the cylindrical casing 8 in inertial force.

[Brief Description of the Drawings]

[Drawing 1] It is the A-A view sectional view of drawing 2 of an arc rotating machine.

[Drawing 2] It is the sectional view of an arc rotating machine.

[Drawing 3] It is the perspective view showing arrangement of the revolving shaft 3 of an arc rotating machine, a disk 6, and a wing 4.

[Description of Notations]

1 \*\*\*\*\*

2 Exhaust Pipe

3 Revolving Shaft

4 Wing

5 Arc Peripheral Surface

6 Disk

7 Bearing

8 Cylindrical Casing

[Claim(s)]

[Claim 1] (1) The arc rotating machine characterized by connecting \*\*\*\*\* 1 open for free passage, and connecting [ casing / 8 / cylindrical ] a draft tube 2 on the same side face as \*\*\*\*\* 1 at a U character mold, arranging a revolving shaft 3 through bearing 7 to the center line of right-and-left both sides of the cylindrical casing 8, and taking out turning effort from the above-mentioned revolving shaft 3 outside.

(2) The arc rotating machine of a configuration of having implanted the disk 6 in the revolving shaft 3 at two-piece parallel, and having fixed the wing 4 between disks 6.

(3) The radius of the periphery of the cylindrical casing 8 and the outer diameter of \*\*\*\*\* 1 are the arc rotating machine of a configuration of having designed so that it might be equal, the outer diameter of an exhaust pipe 2 might also be designed equally and the outer diameter of the height of the periphery side of the cylinder casing 8, \*\*\*\*\* 1, and an exhaust pipe 2 might become almost equal again.

As mentioned above, (1), (2), the arc rotating machine characterized by the equipment which consists of a configuration of (3) \*\*.

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a hydro turbine.

[0002]

[Description of the Prior Art] Conventionally, this kind of equipment generates a vortex by the volute casing, and that eddy energy is used as a turning effort.

[0003]

[Problem(s) to be Solved by the Invention] The following troubles were conventionally seen by this kind of equipment.

(1) Lead the conventional hydraulic turbine to a guide vane from the inner circumference section of a volute casing, its structure is complicated, and its manufacture costs are expensive.

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[0004]

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[Embodiment of the Invention] When the gestalt of implementation of invention is explained with reference to a drawing based on an example, drawing 2 is the perspective view in which the A-A view sectional view assembled the sectional view of an arc rotating machine, and drawing 1 , and the revolving shaft 3, the disk 6, and the wing 4 assembled drawing 3 .

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[0010]

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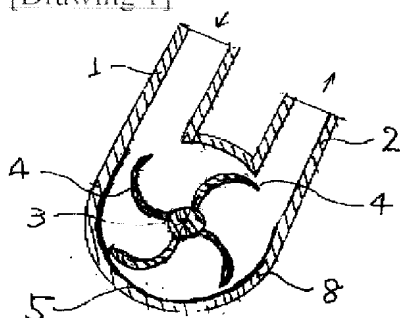
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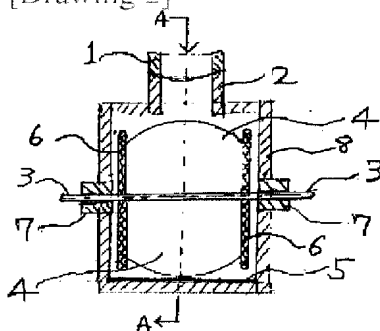
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3. In the drawings, any words are not translated.

DRAWINGS

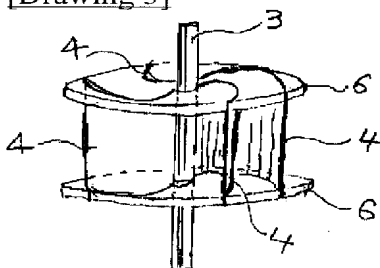
[Drawing 1]



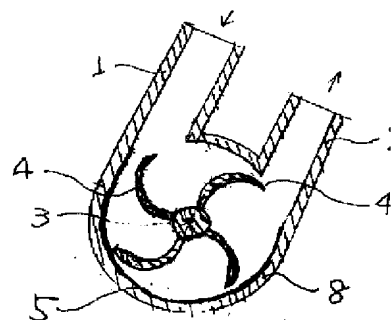
[Drawing 2]



[Drawing 3]



Drawing selection  
drawing 1



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<p>1. JP,2002-138937,A</p>	<p><u>CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS</u></p> <p>[Translation done.]</p>	
	<p>* NOTICES *</p> <p>JPO and NCIPi are not responsible for any damages caused by the use of this translation.</p> <p>1.This document has been translated by computer. So the translation may not reflect the original precisely. 2.**** shows the word which can not be translated. 3.In the drawings, any words are not translated.</p> <p>CLAIMS</p> <p>[Claim(s)] [Claim 1] (1) The arc rotating machine characterized by connecting ***** 1 open for free passage, and connecting [ casing / 8 / cylindrical ] a draft tube 2 on the same side face as ***** 1 at a U character mold, arranging a revolving shaft 3 through bearing 7 to the center line of right-and-left both sides of the cylindrical casing 8, and taking out turning effort from the above-mentioned revolving shaft 3 outside. (2) The arc rotating machine of a configuration of having implanted the disk 6 in the revolving shaft 3 at two-piece parallel, and having fixed the wing 4 between disks 6. (3) The radius of the periphery of the cylindrical casing 8 and the outer diameter of ***** 1 are the arc rotating machine of a configuration of having designed so that it might be equal, the outer diameter of an exhaust pipe 2 might also be designed equally and the outer diameter of the height of the periphery side of the cylinder casing 8, ***** 1, and an exhaust pipe 2 might become almost equal again. As mentioned above, (1), (2), the arc rotating machine characterized by the equipment which consists of a configuration of (3) **.</p> <p>[Translation done.]</p>	<p>4 - 3 5</p> <p>[Trar done</p>
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